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No. 21

1953



## NORTHEASTERN RESEARCH NOTES

NORTHEASTERN FOREST EXPERIMENT STATION

UPPER DARBY PA

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### *SMALL-FOREST MANAGEMENT IN THE SPRUCE-FIR REGION*

Small forest properties occupy about 3.4 million acres, or 25 percent of the total forest land, in the spruce-fir region of Maine and New Hampshire. Careful management of these small forest properties is important to the region and to the owners.

In 1951 a small-forest management project was started on the Penobscot Experimental Forest near Bangor, Maine. The project began on a 47-acre, moderately stocked tract considered typical of small woodlands in this region (Compartment II). In 1952 a 55-acre, well-stocked tract was added (Compartment VII). Table 1 compares the stand per acre on these compartments at the beginning of management.

The management program on both compartments is designed to build up the growing stock, improve stand condition, increase growth rate, and improve stand structure by making frequent light cuts. These cuts will remove the worst trees first, gradually taking poorly formed, defec-

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EXPERIMENT STATION 1

Table 1.—Original stand per acre in sound trees  
5.6 inches d.b.h. and larger

Species	Compartment II		Compartment VII	
	Stems	Volume	Stems	Volume
	<u>Number</u>	<u>Peeled cords</u>	<u>Number</u>	<u>Peeled cords</u>
Balsam fir	51	3.52	60	3.19
Spruce	22	1.99	47	4.20
Hemlock	0	—	47	3.92
Pine	25	1.54	5	.88
Aspen	26	1.45	10	.48
Red maple	21	.94	23	1.33
Paper birch	11	.54	6	.34
Other (cedar, etc.)	18	.75	23	.86
All species	174	10.73	221	15.20

tive, and low-value trees. Growth energy of the site will be channeled into trees of better form, vigor, and species. After the growing stock has been built up, the current annual growth may be harvested each year.

The first cutting on Compartment II salvaged 47 cords of sound dead and dying fir and spruce trees. The second cutting salvaged 13 cords--fir trees that died since the previous cutting, and sound fir and aspen that were crowding more desirable pines and spruces. The first cutting covered 43 acres, and the second cutting 35 acres, of this 47-acre compartment.

On Compartment VII, the first cutting removed 43 cords of sound dead, dying, and defective fir and spruce trees. It also included some sound fir trees removed to favor pines and spruces. This cutting operation covered 29 out of the 55 acres.

On both compartments, the work was done by a 2- to 3-man crew, using a 1-man chain saw and a horse. The felled and limbed trees were skidded to a yard and bucked with a chain saw, and the bolts were stacked at roadside.

Weather conditions were favorable during the operations except that deep snow prevented the winter road from freezing in Compartment II.

Table 2.—Outlays and returns from three improvement cuttings

Item	Compartment II		Compartment VII
	1951	1952	1952
<u>Outlays:</u>			
Felling & limbing .....man-hours..	199.5	91.0	195.5
Yarding .....man-hours..	335.0	73.0	156.0
horse-hours..	154.0	28.0	156.0
Bucking & piling .....man-hours..	85.0	15.0	152.5
Total outlay .....man-hours..	641.0	179.0	504.0
horse-hours..	154.0	28.0	156.0
<u>Receipts:</u>			
Volume sold * .....cords..	46.94	13.10	43.42
Average roadside price per cord .....dollars..	\$ 13.29	\$ 14.64	\$ 12.82
Total value of sale.....dollars..	\$623.74	\$191.81	\$556.82

\* The 1952 cut from Compartment II was 3.13 cords of rough spruce-fir and 9.97 cords of peeled aspen pulpwood. Other cuts were all rough spruce and fir pulpwood.

Because of this, 28 cords had to be sled-yarded to the truck road. Nineteen cords were trucked directly from the bucking yards.

Table 2 shows the direct outlays and returns from each operation, assuming that the

wood was sold at roadside. (Actually the ricked wood was loaded and trucked 14 miles to mill.)

Assuming the forest owners used their own labor, horses, and chain saws, their only added cash outlays would be for gasoline and repairs. In such cases the owners' added incomes would be nearly total roadside value--\$624 plus \$192 in one case, \$557 in the other.

--A. C. HART

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### SOME RECENT PUBLICATIONS

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